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Meat Distribution Programs of Affiliated Food Wholesalers

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UNITED STATES DEPARTMENT OF AGRICULTURE

PREFACE

The facilities and operations of many firms were observed in this research, but the following firms are acknowledged individually because their warehouses and offices were made available for longer periods of time: Charley Brothers Co., Greensburg, Pa.; Fox Grocery Co., Belle Vernon, Pa.; Gateway Grocery Co., La Crosse, Wis.; Giant Food, Inc., Landover, Md.; Golden Dawn Foods, Inc., Sharon, Pa.; Hannaford Brothers Co., Portland, Maine; J.M. Jones Co., Champaign, Ill.; Milliken, Tomlinson Co., Portland, Maine; Penn Fruit, Inc., Philadelphia, Pa.; and Thriftway Foods, Inc., King of Prussia, Pa.

The project was under the general direction of R.W.Hoecker, Chief, and the immediate supervision of John C. Bouma, Investigations Leader, of the Wholesaling and Retailing Research Branch, Transportation and Facilities Research Division, Agricultural Research Service.

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SUMMARY

This report evaluates two meat wholesaling programs used by affiliated wholesalers: The meat warehouse program and the packer-shipment program.

The meat warehouse program, as described here, is the program in which food wholesalers distribute meat from their warehouses direct to retail stores. The packer-shipment program is the program in which wholesalers consolidate orders from retail stores and place the orders with packers or processors who deliver the meat to the retail stores. With both programs, the wholesaler buys and sells meat, bills retailers, and provides such services to retailers as supervising operation of the meat department and providing promotional material. Large-volume wholesalers normally have the right to select meat at their suppliers' plants under either program.

Advantages to the wholesaler of the meat warehouse program are that it (1) establishes an image of the wholesaler as a one source supply for major retailer requirements, (2) increases his profit potential, (3) makes it possible for him to ship mixed loads of merchandise and thereby gain efficiencies, and (4) gives him better control of the product. A disadvantage is the additional capital required to build and maintain warehouse facilities, maintain an inventory, and pay labor costs for handling the meat.

Advantages of the packer-shipment program to the wholesaler are: (1) Release of capital that would be required for building a meat warehouse to other uses; (2) less warehouse labor cost; and (3) less cost for delivery trucks and trailers. Disadvantages to the wholesaler are: (1) Less control of product and (2) lack of, or reduced, selection rights at the packing plants.

Net operating income was 0.78 percent of meat sales, for eleven firms using the packer-shipment program, and 0.95 percent for four firms using the warehouse program.

Handling operations under the meat warehouse program included receiving and storing meat, assembling it into customer orders, and loading out trucks with orders for retailers. Maximum efficiency was obtained when the motorized meat rail was used for these operations to move carcass cuts of fresh meat. In receiving, for example, a product could be moved approximately 200 feet to a cooler at the rate of 24 tons per man-hour by motorized rail, but only 7 tons could be moved per man-hour by pushing the meat manually on a nonmotorized rail. Also, with the motorized rail, receiving and shipping operations could be performed simultaneously. The cost for transport of hanging meat from the cooler to the loading dock when a motorized meat rail was used was \$1.85 per hour or about 42 percent less than the cost of pushing carcasses along a nonmotorized rail with an electric forklift truck.

Orders of boxed meat could be assembled faster with a tow tractor pulling two 4-wheel selector trucks than with an electric pallet jack and pallet. The rate of receiving and selecting boxed meat for orders was increased in one warehouse through use of daily recapitulation sheets of retail orders. Receipts were placed on pallets in a temporary holding area and later moved directly to the order assembly line and distributed to cribs or cages that were assigned to specified retail stores. This method eliminated the need to place the boxed meat in storage and reduced order assembly time.

Meat Distribution Programs of Affiliated Food Wholesalers

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BACKGROUND AND OBJECTIVES

Grocery wholesalers have historically supplied fresh meat to their retail accounts through meat packers or processors. More recently--within the last 15 years--some wholesalers have started to deliver meat direct from their own warehouses or distribution centers. General grocery wholesalers, through close relations with retailers, have become full-line food supply centers, providing produce, dry groceries, frozen foods, dairy products, and many nonfood items to retail food stores from a centrally located facility. Thus, tying fresh meats to the central operation was a logical step for the affiliated wholesaler to take.¹

A study was made of the two types of wholesale meat programs used by most of the affiliated food wholesalers to determine the advantages and disadvantages of each program.

The warehouse meat program, as described in this report, is one in which the wholesaler actually handles the meat in his warehouse and delivers it to retail stores.

The packer-shipment program is one in which the wholesaler obtains meat orders from retail stores, consolidates the orders, and places them with packers or processors. The packers or processors deliver the meat orders directly to the retail stores. The wholesaler bills the retailers individually and pays the packers or processors, but does very little, if any, physical handling of the product.

A secondary objective of the study was to obtain opinions of wholesalers about current meat marketing programs--how they felt about existing methods of supply and what ideas they had to improve distribution practices in the future.

Interviews were held with cooperators selected by the industry as having good wholesale meat operations. More than a score of affiliated food wholesalers were interviewed; five were selected for intensive study because they had warehouse facilities for handling meat and were judged typical operators. Five other firms, who obtained meat for their retailers with the packer-shipment program, were also studied intensively. Meat sales of these ten firms ranged from \$1 million to \$15 million annually (wholesale value).

The sales mix (proportion of sales by departments) for all wholesalers in the sample having programs in four major merchandising departments is given in figure 1. Sales volume for stores served by the firms studied aggregated over \$646 million in these departments.

Applicable portions of cooperating firms' financial operating statements were examined, time studies were made of handling operations, and product flow was evaluated.

Reports of wholesale fresh meat practices of affiliated food wholesalers are practically nonexistent. Results of this study should help the reader to improve his firm's fresh meat operation regardless of the type of meat program he favors or is currently using.

¹ Affiliated wholesalers or distributors include those supplying corporate chains, voluntary groups, cooperative groups, and consumer-owned retail food stores. They exercise some control of retail operations at the headquarters or management level.

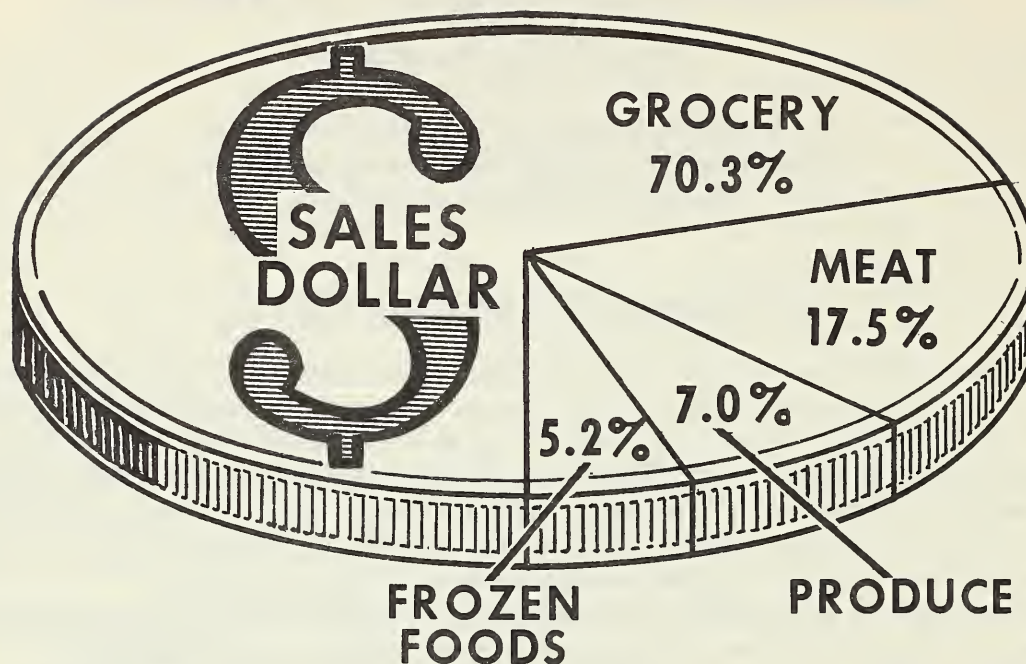


Figure 1.--Average sales mix of affiliated food wholesalers having programs in four major merchandising departments.

THE PACKER-SHIPMENT AND MEAT WAREHOUSE PROGRAMS

Except for the physical handling of meat, operating practices of affiliated wholesalers were similar, whether they used the packer-shipment or meat warehouse program. Organization of the buying and sales staff and buying, sales, and customer service practices depended more on the size of firm than on the type of meat program. Each firm, however, had a meat merchandiser who reported to the general manager, the sales manager, or the executive vice president. The meat merchandiser was responsible for soliciting new accounts and for establishing credit terms for customers. He supervised a staff of meat merchandising specialists (meat supervisors), who assisted retailers with meat merchandising and operational problems and served as liaison with the retailers. The job of the meat supervisors was to build prestige for the firm's meat program, develop goodwill and trust among customers, work with stores on settlement of complaints, and keep retailers informed about new items and market developments. Many wholesalers also had the meat supervisors contact new customers.

Large firms in the study had separate buying and sales departments, whereas smaller firms usually had one company executive who served as meat merchandiser and who was responsible for both buying and sales.

The buying staff of large firms consisted of a head buyer, who was responsible for the entire meat procurement program, and one or more assistant buyers, who were responsible to the head buyer for purchasing specific meat items. In smaller firms, clerical employees assisted the responsible executive by placing orders for fast-moving, nonspeculative, standard items.

Buying Practices

Large firms were usually able to order many items in truckload quantities. The buying policies of some large firms included implicit meat selection rights at their suppliers' packing plants, and these firms employed one or more men to select fresh meat in packing plants for retail accounts. Large firms had fewer problems in securing the quality, grade, and conformation of meat that they specified, or in disposing of meat that did not fulfill exact specifications, than medium-size and small firms. When a large firm telephoned an order to a packer, for example, for 140 beef carcasses and the packer had only 126 that met the specifications, the packer balanced out the order by including 14 carcasses slightly below or above specifications. Because it had a large number of retail accounts, the firm could allocate these 14 carcasses to stores that could readily merchandise them.

Small firms normally did not have selection rights at packing plants because their volume of purchases was too small. They were therefore more dependent on the packers' integrity and honesty than larger firms were for fresh meats that met their specifications.

Sources of Supply

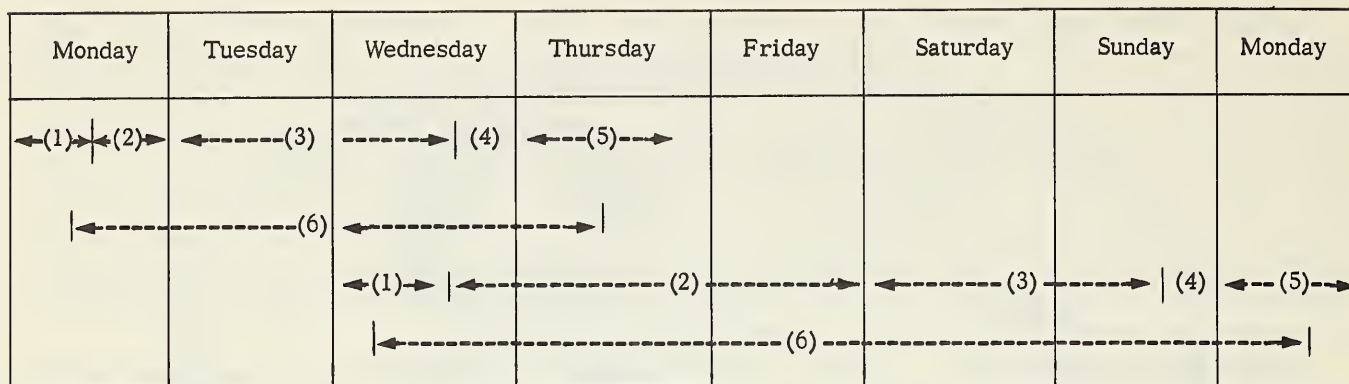
Few packers could supply meat wholesalers with their entire requirements--fresh beef, veal, lamb, and pork--from a single plant. The principal reason was that large meat packers almost without exception did not process veal. This product was usually handled locally by an independent slaughtering plant or processing firm. With this limitation, analysis showed that large wholesalers bought from fewer suppliers than small wholesalers did.

The wholesalers in the study grouped sources of supply into two categories, regional or local. Regional supply sources included packers who operated nationwide distribution systems with regional bases to service customers within a given radius. Orders were normally consolidated by a regional branch and forwarded to the closest slaughtering plant, or were filled from stock on hand at the regional base.

Local supply sources for meat wholesalers included independent packers engaged in the slaughter of livestock and distribution of the meat at the local or regional level. Some local packing plants were willing to improve the buying privileges of small wholesalers, including in-plant selection rights. This may have been because of a packer's recent entry in the business or because of his desire to take over territory of a competitor. Other supply sources were jobbers, truck distributors, and brokers. Jobbers were engaged primarily in sales of meat to hotels, restaurants, and institutions, with some sales to retail stores. Truck distributors, called "meat peddlers" in the industry, had no fixed place of business for handling meat, and sold small quantities locally through one or two trucks, usually to small neighborhood stores. Brokers acted as agents for sellers, negotiating sales with buyers, generally in large-volume lots. Brokers completed sales arrangements but did not handle the merchandise.

Firm A, which warehoused its meat, purchased from 60 to 70 percent of its meat tonnage from one packer. Fresh meat was shipped from a large, modern plant located in the Midwest, and processed meat products were obtained from the packer's local plant 60 miles away. There were several reasons for the wholesaler's decision to buy from this packer. The packer had chosen a former Federal meat inspector to select fresh meat at its Midwest plant for the wholesaler and was willing to select items for each retail order individually and to load identical cuts together for shipment to the wholesaler. This service, which other packers refused to offer, greatly simplified operations at the firm's meat distribution facility, which was located in an old building where space was limited. The packer had also agreed to the wholesaler's ordering and delivery schedule (fig. 2), which was tighter than other packers would undertake to follow, and was willing to alter his established customer billing procedures to accommodate the wholesaler's needs. Unlike some potential suppliers, this packer could ship fresh beef, veal, lamb, and pork from a single plant and could supply an exceptionally wide line of high-quality manufactured products from its plant close by.

ORDERING AND DELIVERY SCHEDULE ESTABLISHED JOINTLY BY AN AFFILIATED FOOD WHOLESALER
AND A MEAT PACKER



- (1) Retailers' meat orders telephoned to the wholesaler, combined and placed with packers.
- (2) Time during which the firm's order is selected and loaded for shipment.
- (3) Travel time by truck.
- (4) Order received at the firm's meat distribution facility, inspected, weighed, assembled into store orders, and loaded on refrigerated delivery trucks.
- (5) Time during which orders are delivered to participating retail stores.
- (6) Reaction time, or the average time interval between a retailer's ordering and receiving delivery of his meat order.

Figure 2.

Firm B in the study, which operated with a packer-shipment program, purchased most of its meat from an independent local packer. The reasons for dealing with this supplier included permission for the wholesaler to select the meat. The wholesaler thought his firm's buying volume would not warrant this privilege from a large regional packer. This wholesaler contended that many packers had the tendency of shipping first what they considered good for the packing-house, and second what was good for the packinghouse customer. The wholesaler was able to overcome this serious fault by dealing with a local independent packer. He also thought it was good business practice to place purchase orders in his retailers' trade areas.

Firm C also operated under the packer-shipment program. Four years before the time of the interview, meat programs were unheard of in firm C's trading area, which was very heavily dominated by corporate chainstores. Over 60 packers operated in firm C's area. Fifty of these packers were small local uninspected houses. Ten were regional packers. Firm C's greatest problem in establishing a wholesale meat program was to eliminate purchases by retailers from the local uninspected houses and a few of the national packers who had been calling on firm C's stores for years.

Like most other meat programs, firm C's meat program began with a complete central ordering system. However, since it was impossible for the firm's representatives to visit all stores each week, the firm was continually vulnerable to packers not in the program soliciting business from retailers. After 2 years of operation, firm C selected six packers who were officially authorized to solicit retailer business. Firm C asked each of these packers for one man to act as a liaison between the wholesaler, the retailer, and the salesman's company. Each of these men would be responsible for his company's orders, visiting the stores to display and give samples of new items, point-of-sale material, promotions, and to check on product complaints. Packer representatives would visit meat program headquarters weekly to coordinate the items mentioned above, and to discuss ways to increase business.

Establishing the above change had several advantages: It limited the number of packers calling on affiliated retail stores, and the meat merchandiser declared that about 85 percent

of all product delivered to the firm's stores was handled through the packer-shipment program. Relations of the wholesaler with retailers in the program were better established, and relations between the wholesaler and the packers were much stronger than before. According to the meat merchandiser, "They (packers) feel a part of our program and indirectly become salesmen for us, which has increased our prestige in this area." The change also strengthened the advertising program and controls for the stores and was less expensive because it required less time to deal with 6 packers than with 60.

Firm D, a small distributor operating with the packer-shipment program, purchased from 71 suppliers. An independent meat packer supplied 45 percent of the firm's requirements; 5 local or regional packers supplied 45 percent; and 65 packer-processors supplied 10 percent. This large number of suppliers was used because (1) veal, for example, was not available from large regional packers; (2) it was convenient to purchase small amounts (less than 200 pounds of product per week) from truck jobbers; and (3) demand by ethnic groups for specialized meat products required purchases from many suppliers.

On the whole, affiliated wholesalers usually bought from a large number of suppliers. Most executives of firms in the study tried to maintain good relations with several packers so that meat supplies would be assured in the event a labor dispute or natural disaster curtailed operations at a slaughter house. Although executives of small or medium-size firms were aware of the benefit to be gained from concentrated purchasing, they did not wish to deal exclusively with one supplier because they were not sure their firm's volume of business would be large enough to assure continued careful attention from the packer.

Meat Quality, Classes, and Grades

Affiliated wholesalers normally did not establish standards for fresh meat quality grades at the warehouse level because the Federal grading system has general consumer acceptance, and improvement of the Government system attempted by a single wholesaler could not be economically justified. However, one national voluntary group of wholesalers has been able to establish a private meat brand for wholesalers participating in the program that has met with excellent consumer acceptance.

Detailed specifications have been established by the national voluntary group headquarters for meat to be used in the private label program. Selectors are hired by the national group to obtain the desired quality of meat in packinghouses and to arrange to ship the selected meat to warehouses of participating wholesalers.

Member wholesalers of the national voluntary group promote the private label meat in their local advertising programs. The program requires that all affiliated retailers in the program handle the private label meat and participate in the advertising program by having an adequate supply of the advertised specials on hand.

Effects on Retailer-Wholesaler Operations

Factors in the retail operation were affected by buying practices at wholesale. The effect on the receiving operation at the retail level was particularly strong for the packer-shipment program. The labor savings resulting from receiving from a few suppliers rather than many are obvious. There will be less tieup of receiving space, equipment, and store personnel with relatively few suppliers.

Many times the quality, conformation, and marbling of the shipped product does not meet the retailer's image when he placed the order, and the wholesaler is confronted with solving the problem. The wholesaler has less difficulty in handling problems of product acceptability when he deals with fewer suppliers.

Sales Practices

The meat merchandiser usually contacted prospective customers for his company's wholesale meat program. Sometimes the meat supervisors solicited new accounts. Suppliers, brokers, and meat product manufacturers occasionally notified a wholesaler of potential customers.

Participating Agreements With Retailers

Many wholesalers, when first establishing a wholesale meat business, accepted affiliated retailers in their meat program without a formal participation agreement. However, most wholesalers, in this study, with effective meat programs had signed contracts with participating retailers. One firm with the packer-shipment program obtained 90 percent participation from signers of an agreement; that is, retailers made 90 percent of their meat purchases through the wholesaler. The majority of the signers had received other products such as groceries, produce, and frozen foods from the wholesaler. The meat merchandiser stated that 100 percent participation could be obtained from his retailers with use of the meat warehouse program. An example of a typical participation agreement used by affiliated wholesalers is shown in the appendix.

A problem that all wholesalers experienced was with retailers purchasing from the so-called "gypsy," a term used by the trade to describe a one-man supply operation, not Federally inspected, and usually operating out of a small facility.

Minimum Size Order

Most of the wholesalers studied had a minimum sales order policy which varied in dollar amount from \$25 to \$100. The firms that warehoused meat generally had a higher minimum amount than those firms that used the packer-shipment program. One wholesaler had no established minimum order size. Another, who had a minimum of \$100 per order, pointed out that a week's business selected from retail accounts at random showed about 35 percent was for orders less than the minimum. This wholesaler knew the meat order of less than the minimum was served at less profit to the company, but he felt the convenience aspect and the buildup of the one-source-of-supply concept in the customer's mind were worth something even though they were intangibles that were difficult to measure. Two other wholesale operators encouraged their sales personnel to stress the minimum order policy.

New Accounts

Wholesalers interviewed about their practices in accepting new customers were unanimous in saying that the customer's credit rating was a prime consideration.

Talks with meat packers about a new account sometimes shed light on the ability and inclination of a potential customer to meet his financial obligations. However, the information usually was general because packers were not inclined to discuss their firm's credit policies with outsiders.

The wholesaler's credit department further helped to determine a new account's ability to pay. The credit department had access to credit ratings for business establishments and could contact current customers for information.

The minimum order size should help to determine the profit potential in accepting new accounts. In addition, business volume and years in business should indicate the permanency of the account on the wholesaler's records.

Methods of Contacting Retailers for Orders

Contact with customers to obtain orders was by a personal call or by telephone. Other contact media were used to assist the personal call and telephone call or to supplement them to a minor degree. The telephone was used altogether by one firm for sales work; the wholesaler said that both he and his customers liked this type of order taking because it was convenient and less expensive than personal sales calls.

Sales expense of obtaining retail orders by a traveling salesman and by a telephone salesman were established. This comparison is shown in table 1.

TABLE 1.--Estimated sales expense of affiliated wholesalers, per retail meat order, by type of salesman

Cost item	Traveling salesman	Telephone salesman
	<u>Dollars</u>	<u>Dollars</u>
Labor ¹	1.50	0.50
Transportation or telephone....	.50	.10
Meals, tolls, etc.20	--
Total.....	2.20	0.60

¹Assuming a wage rate of \$3 per hour for the salesman.

Salesman's labor cost in table 1 is based on completion of two retail calls per hour by the salesman calling in person and six calls per hour by telephone. Transportation cost of 50 cents assumes 5 miles of travel between stores at 10 cents per mile. Telephone cost of 10 cents is based on placing one local telephone call to contact each retailer. These costs vary with the required number of local and long distance telephone calls to reach a retailer and with the number of miles of travel required for a traveling salesman to reach his accounts. The cost for meals, tolls, and other incidental expenses are incurred by the traveling salesman as he makes his calls.

The estimated sales expense to obtain an order by telephone is approximately one-fourth the estimated expense to obtain an order by a traveling salesman. When orders are obtained by telephone, price changes can be transmitted to the retailers more quickly. A disadvantage is that the personal contact associated with a salesman's visit to a customer's store is lost. This, however, is compensated for by the regular contacts made by the meat supervisor.

Customer Service Policies and Practices

All affiliated wholesalers in the study provided their customers with merchandising services. Some merchandising aids were made available to the wholesalers by processors, packers, and various trade organizations. These aids usually were tied to specific promotions. The wholesalers in turn distributed them to retailers. Cutting demonstrations were pretty much a standard wholesale service practice, and merchandising clinics for meat department managers were offered by most firms.

One wholesaler attempted to provide a private label insert on national brand merchandise to promote the wholesaler's image in the highly competitive area for retail meat business and also to enhance the retailer's competitive position. The wholesaler obtained permission to use a national brand label, and to place his own label insert on it. The national brand was used to

help presell the wholesaler's private label. However, the wholesaler could not afford to feature the specific national brand of merchandise exclusively in his stores, which was a normal requirement for the use of the national brand merchandise label.

All of the wholesalers used meat supervisors to help the retailers operate an effective meat department. A supervisor was usually assigned a number of retail stores, which he visited on a rotating basis. The supervisor would help with problems such as display, equipment maintenance, and supply of promotional aids. A checklist was usually used by the supervisor to help the retailer on the general appearance and operation of the meat department and to keep the wholesaler informed. A meat department checklist used by one wholesaler is shown in the appendix.

Another meat merchandiser used a more detailed "store contact report." (See appendix.) The interviewee reported very satisfactory results from use of the form and felt it was effective as long as the company representative making the report was rotated among the stores. His lack of familiarity with the store owner was essential. The meat merchandiser stressed that after the report was completed, it then had to be accepted by the retailer. This required a salesman skillful in understanding the basic factors that motivate the store owner to take corrective action.

Some wholesalers used the dual-supervision concept under which one man would supervise another retail department in addition to meat. The vice-president in charge of meat sales of a middle-sized company said that his company was seriously considering offering dual supervision for its member stores, so that one supervisor would be responsible for guiding and counseling two retail store departments. The interviewee favored supervisors with meat handling training for this dual capacity. He went on to say, however, that grocery supervisors could be successfully trained in meat merchandising. The main advantage to the wholesaler with dual supervision would be fewer men going to stores, thus reducing the expense for transportation, lodging, and meals to provide this service. A benefit to the retailer would be the advantage of dealing with one less individual.

HANDLING OPERATIONS AND WAREHOUSING CONSIDERATIONS-- THE MEAT WAREHOUSE PROGRAM

This section deals with the firms that used the warehouse meat program--those firms which actually handled the meat product in a warehouse. Warehouse space devoted to the meat operation averaged about 15,000 square feet, but warehouse shape differed for each firm. One wholesaler operated in a multi-story building; another in a modern, one-floor structure; another in a grocery warehouse that had been converted to handle meat. Location of the meat warehouse varied also, from a congested, waterfront area of a city to a modern, planned area in an industrial development of a county.

Physical functions of warehousing include handling of product into, within, and out of the warehouse. Meat is received at the rail dock and truck dock; weights recorded on bills of lading are checked and the meat is placed in storage. Items are selected to fill customer orders; they are weighed and the weight is recorded on customer invoices. Meat orders are loaded out on trucks for delivery to retailers. Discussions of these operations follow. Delivery functions to or from the warehouse are outside this report's scope.

Receiving

All five meat warehouses had docks constructed at truckbed height to handle truck receipts. Only one wholesaler received meat by rail car, although all warehouses had sidings equipped to unload products on docks at rail car door level.

Some trucks and trailers delivering meat to the warehouse had meat rails that were permanently installed. With these rails, the carcass meat cuts could be pushed along the rail from

inside the trailer onto the warehouse's meat rails without hand-carrying. The space between the trailer and dock was bridged with a section of meat rail made specifically for that purpose. Some trucks and trailers had pipes with stationary hooks on which the individual carcass cuts of meat were hung. The cuts had to be carried individually to the dock and hung on the warehouse meat rail. Some trucks had neither meat rails nor hooks; the meat was stacked on the truck floor. The cuts had to be picked up from the floor, hand-carried to the dock, and hooked on the meat rail.

Trucks with permanent meat rails were the fastest to unload. Labor productivity was 12 tons per man-hour. For unloading trucks that had neither meat rails nor hooks, production was 2.4 tons per man-hour. Production with trucks with hooks was 3.6 tons per man-hour; the worker did not have to stoop to grasp the carcass cut before carrying it to the dock.

When the meat was positioned on a rail at the receiving dock, two methods of moving it in the warehouse to a cooler were observed. One method used a motor-driven, endless link chain that kept the merchandise moving along the rail until it reached the cooler. At the cooler door, the meat was shunted to a motorized chain running the width of the cooler. In the holding and selection areas in the cooler, meat was pushed manually on the rail. A meat rail with motorized endless link chain is shown in figure 3.

The other method was a nonmotorized meat rail; meat was pushed manually on the rail during the entire receiving operation. Figure 4 shows sides of beef on nonmotorized meat rails in a cooler.



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Figure 3.--A motorized endless link chain meat rail. Hand-carrying is not necessary.



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Figure 4.--Beef on trolley hooks on nonmotorized meat rail must be manually pushed along the rail.

With the motorized chain 24 tons could be moved per man-hour, and with manual pushing, 7 tons could be moved per man-hour. These rates were achieved when moving the product approximately 200 feet, from the dock edge to a position in the cooler. With the motorized chain, the receiving and shipping operations could be performed simultaneously. This was possible because two parallel lengths of chain extended from the dock, over the scale, along a passageway to the door of the holding room. Another reason the motorized belt was faster than manual pushing was that the motorized belt ran continuously, and workers were not required to walk to and from the rail to move the product.

The first element of the fresh meat receiving operation for the warehouse crew occurred when the carcass cut of meat was hung on the hook at a dock door or crossed the dock threshold from the truck rail. A receiving crew usually consisted of a hook man, one or two pushers, and a scale man. A piece count was taken as the meat passed over the scale, where weights were recorded in units of a predetermined number of pieces. After the weights had been checked against the shipper's bill, the meat was moved along the meat rail to the cooler. Visual inspection of the meat was made periodically by the warehouse foreman as the meat was hooked at the dock or as it traveled to the cooler area.

Methods of receiving boxed meat items were similar to methods used for groceries in the dry grocery warehouse. The truck was backed to the receiving door; the merchandise was placed on a pallet or a 4-wheel handtruck by the driver; the bill of lading was checked for accuracy of the shipment with the receiving clerk's copy of the purchase order; the pallet or handtruck

was moved to the holding area; and the merchandise was placed in storage until the order selection process occurred. Items were placed in storage by various methods, but usually the items were positioned as a unit in a pallet rack slot or a floor slot with a forklift truck or a pallet jack.

An interesting variation in the usual receiving procedure for boxed items, which was tied in with the method of assembling orders, was observed in one firm. The receiving clerk was given recapitulation sheets for the day's retail store orders from the firm's tabulating department. When merchandise was received, an empty pallet was positioned on a 4-wheel selector truck, and the merchandise for that day's orders was stacked on the pallet by the truck crew. The receiving clerk then checked the numbers of cases against the recap sheet for each item, stapled the recap sheet to a case of the merchandise, and had the pallet moved to a holding area. The "put-away-in-storage" step was eliminated and the stock was not handled again until order selection began. (See discussion of dispersal method in section on order selection.) With this system of receiving, production was 18 tons per man-hour. This compared with production of 4.75 tons per man-hour for conventional receiving and storing.

Order Selection

Most wholesalers assembled orders the afternoon or night before delivery was scheduled. A few wholesalers assembled local orders the day of scheduled delivery, but distant orders were assembled the evening before to insure that the trucks were loaded and ready for early departure.

Selection of carcass cuts of hanging meat in the cooler normally followed this pattern: (1) Obtain order, (2) read, (3) travel to section of the room where meat is hung, (4) select meat and push to order filler's desk, (5) obtain crayon and write store number on tag, (6) stick tag in meat, (7) check order, and (8) push meat away (on rail toward cooler door).

Selection operations timed in the five warehouses established a rate of 4.0 tons per man-hour for the constant elements noted above. Rates fluctuated when variables such as these were introduced: (1) Obtain knife and cut meat, (2) obtain saw and cut bone, (3) obtain hook, and engage hook on meat rail, (4) hang meat, (5) trim carcass cut, and (6) dispose of trimmings. Production variance was directly related to the number of variables introduced.

The order selector for boxed items, such as pork loins and spare ribs, operated an electric pallet jack carrying a pallet. Warehouse location of merchandise was not specifically designated on invoices, and the path as the assembler selected the order depended on his knowledge of merchandise storage. An item was seldom stored in the same place on consecutive days, and considerable backtracking by the selector resulted.

When an order was completely assembled, or when a pallet was filled with boxed meat items, the selector traveled to the delivery truck loading area and placed the pallet load on the dock. Table 2 shows time utilization on a percentage basis for order selection of boxed merchandise, using a pallet jack and pallet. Productive time was 85 percent of the total time spent. Production with this method in the five warehouses that warehoused meat averaged 2 tons per man-hour.

Approximately one-fourth of total travel time was used to obtain invoices from the foreman's desk on the dock, an average travel distance from the storage area of 250 feet. This time was reduced substantially when invoices were placed in an order box at the start of the selection route.

Use of the electric low-lift platform jack and pallet for order selection was compared with an electric tow tractor pulling two 4-wheel selector trucks. The pallet holds an average of 20 packages; two 4-wheel selector trucks hold an average of 40 packages. Table 3 shows a comparison of order selector production by the two methods, based on order size.

With increased order size, production per man-hour with the tow-tractor method increased at a faster rate than production with the pallet jack and pallet method. The increase in productivity was 167 packages per man-hour with the tow-tractor system for the span of order

TABLE 2.--Percentage of order selector's time utilized by various elements of the job in assembling boxed meat items with a pallet jack and pallet

Type of work or element	Percent of time ¹
Obtain order.....	0.9
Obtain jack.....	.8
Obtain pallet.....	1.3
Travel.....	30.9
Selection time.....	28.7
Arrange pallet load.....	8.0
Write-read.....	11.3
Mark cases with store number.....	2.5
Place pallet at dock.....	.9
Total productive time.....	85.3
Aisle block.....	2.3
Hunt.....	.7
Backtrack.....	1.7
Talk.....	1.6
Miscellaneous.....	8.4
Total nonproductive time.....	14.7
Total time.....	100.0

¹ Includes a 15-percent personal and fatigue allowance.

TABLE 3.--Order selector production in selecting boxed meat items in a meat warehouse, by order size and method¹

Order size (number of packages)	Electric low-lift platform jack and pallet ²		Tow tractor and two 4-wheel selector trucks ²	
	Average distance traveled per order	Order selector production	Average distance traveled per order	Order selector production
	<u>Feet</u>	<u>Packages per man-hour</u>	<u>Feet</u>	<u>Packages per man-hour</u>
5	125	49	152	43
10	156	79	225	75
20	469	124	687	119
50	1,718	169	1,473	210

¹ 15-percent personal and fatigue allowance included.

² Each pallet and order selector truck holds an average of 20 packages.

sizes shown. For the pallet jack and pallet method the increase was 120 packages per man-hour, or approximately 28 percent less.

The major reason for greater increase with the tow tractor is that fewer trips to the dock are required for large orders. With the pallet jack system, a trip must be made to the dock for every 20 packages assembled, whereas with the tow-tractor system a trip must be made for every 40 packages.

Size of order handled in the warehouse influences labor and equipment used in order assembly and loading. By studying order size concentrations over a given period of time, it will be possible for management to determine the approximate labor productivity it can reasonably expect for its average order size, when using methods and equipment similar to those described here.

An atypical order assembly method for boxed fresh meat and delicatessen items, called the dispersal method here, was studied in one warehouse. Cages or cribs were set up around the periphery of the order selection area (fig. 5). Each cage was assigned to orders for one store and was marked with the store number. The cages were arranged in numerical sequence in accordance with a tabulator recapitulation sheet. The recap sheet listed items ordered by individual customers and the totals of all items ordered, by type of item. The recap sheet was used in the receiving operation to assemble on pallets items ordered by retail stores for that day. (See discussion on page 11.) When order assembly began, these pallet loads were brought from the temporary holding area to the order assembly line. Selection of merchandise for orders was simply a job of reading down the recap sheet and lifting off the dolly or pallet the number of units for a particular order.

This method had an advantage because it had a built-in check of overages and shortages--a package remaining on the dolly on completion of order selection indicated an error. The method had a limitation, however, because of the floor area required to hold the bins or cages. In the warehouse cited, the firm served 65 large-volume outlets and had adequate area for holding filled orders. The cages and cribs used with this method are shown in figure 6.



BN-24549

Figure 5.--The boxed meat order selection area of one warehouse, which used the dispersal method of order selection. Cages and cribs are arranged on the periphery of the area in store number sequence.



BN-24550

Figure 6.--Cage (left) and crib (right) used in the dispersal method of order selection.

The carrier shown on the left (cage) in figure 6 was pushed as a unit into the delivery truck by the truck loader, and the carrier on the right (crib) was transported by forklift truck and positioned in the truckload. Cribs could be disassembled and returned to the wholesaler after meat orders were delivered.

Loading Out

Some orders were sent from the wholesaler's dock in a load mixed with groceries, produce, and other food lines. At other times, meat orders exclusively were loaded in a truck for delivery to one or more retailers. Two of the wholesalers loaded their delivery trucks the evening before delivery was scheduled. The other firms waited until the morning of delivery. Those firms that loaded early felt that overtime costs were less when loading was programmed well in advance of scheduled delivery. All wholesalers loading the evening before delivery used refrigerated trailers.

Loading out of meat-rail stock involved the following elements: (1) Push meat from cooler door to scale; (2) weigh and record weight on invoice; (3) push meat from scale to trailer; and (4) hand-carry and position pieces in trailer. Crew size for this operation ranged from 4 to 7 men. Normally, one man pushed meat to the scale, one man weighed the meat, two men pushed the meat to the loading dock, and one or two men hung or stacked meat in the trailer. Variations occurred when the meat rails were motorized. The push-meat-to-trailer element was

eliminated or was much less time-consuming, and if the trailer was equipped with rails, the hand-carrying of meat from the edge of the dock into the trailer was eliminated. With motorized rail and rail-equipped trailers 12.3 tons could be loaded out per man-hour, and with manual pushing and hand-carrying, 3.9 tons per man-hour.

In one firm, an electric forklift truck was used to push carcasses along the meat rail from the cooler to the loading area. Labor and equipment cost of this method of transporting carcasses was compared with that of the motorized meat rail (table 4). No labor was required for transporting with the motorized rail. The cost per hour for the motorized rail was about 42 percent less than that for the forklift truck. When the forklift truck was used, the product was sometimes damaged by the pushing device and meat jumped the hook and fell to the floor.

In most of the warehouse loading operations observed, individual items of boxed merchandise were hand-stacked in the delivery truck. When the dispersal method of order selection was used, however, the cages and cribs could be loaded into trucks as units.

Straight body trucks of 1 to 2 1/2 tons and tractor-trailers were used for delivery. Straight body trucks were used most frequently for deliveries to downtown areas, and trailers were used predominantly for deliveries to more distant points. Straight trucks had greater maneuverability and could economically handle the order sizes served in downtown areas. Most trucks were equipped with a door on each side as well as the full door at the rear to facilitate delivery in any available parking situation.

TABLE 4.--Labor and equipment cost per hour for moving meat quarters from the cooler to the loading area, by type of equipment

Type of equipment	Initial cost	Annual ownership cost ¹	Annual operating cost			Total ownership and operating cost		Labor cost per hour	Total labor and equipment cost per hour
			Electricity	Maintenance	Total	Per year	Per hour of use ²		
	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>	<u>Dollars</u>
Motorized meat rail.....	15,000	2,850.00	90.00	750.00	840.00	3,690.00	1.85	--	1.85
Electric forklift truck..	6,016	1,194.66	36.56	90.24	126.80	1,321.46	.66	2.50	3.16

¹ Based on an expected life of 10 years, straight-line depreciation, 5% interest, and 4% taxes and insurance. Depreciation cost for the forklift truck includes costs for battery and battery charger. (See Bouma, J. C., and Lundquist, A. L. Grocery Warehouse Layout and Equipment for Maximum Productivity. U. S. Dept. Agr. Mktg. Res. Rpt. No. 348, 55 pp., illus. July 1959.)

² Based on 2,000 hours annual use.

Warehousing Considerations

When management considers whether to distribute fresh meat through the distribution warehouse, it must consider costs of warehouse construction and costs of labor and equipment. The price per square foot to build a modern, one-floor meat warehouse is estimated at \$12. This cost compares with estimates of \$6 per square foot for grocery warehouse space, \$10 for produce space, and \$18 per square foot for frozen food warehouse space. The greater cost of the frozen foods building is largely because of equipment to control temperature and humidity for

providing optimum holding conditions for the product. Important factors in the \$12-per-square-foot cost for a meat warehouse are the meat rails and labor to install them.

Figure 7 illustrates a good warehouse layout for handling fresh meats, frozen foods, and delicatessen items. The warehouse is designed for handling approximately \$2 million annually in meats. The meats, frozen foods, and dairy products are shipped together on a single delivery truck. Fresh meats can be received and shipped concurrently on the 2-way meat rails.

ADVANTAGES, DISADVANTAGES, AND FUTURE OF WHOLESALE MEAT PROGRAMS

Advantages to the wholesaler of the meat warehouse program are: (1) buildup of the wholesaler image--the one-source-of-supply concept; (2) greater profit potential; (3) ability to ship mixed loads of merchandise from one central point (the warehouse) and thereby gain efficiencies--the economy of scale concept; and (4) better control of product. For the retailer, benefits include: (1) delivery of an entire order on one trailer from one supplier; and (2) consequently, more time available to him for other retail duties because less time is spent with the receiving operation; and (3) good buys across the board because of increased buying power of the wholesaler. A disadvantage for the wholesaler would be the additional capital funds and labor required for the operation.

Advantages of the packer-shipment program to the wholesaler are: (1) release of capital funds that would be required for the building of a meat warehouse to other uses; (2) less warehouse labor cost; and (3) less maintenance for delivery trucks and trailers. Disadvantages to the wholesaler with this program are: (1) less control of product; (2) lack of, or less, selection rights at the packing plants; and (3) loss of profit potential with a warehousing program.

The data in table 5 show average income and expense, on a percentage basis, of eleven firms that handled meat wholesaling through a packer-shipment program and four firms that warehoused the meat.

Estimated costs for retailers to obtain fresh meat, by three methods of purchase, were obtained from one wholesaler (table 6).

Interviewees were asked what they expected in the future for fresh meat wholesaling. Personnel of five firms felt that the regional functions of national meat packers were being performed effectively by affiliated wholesalers, and that meat warehousing by affiliated wholesalers would increase.

These persons stated that an affiliated wholesaler is justified in setting up a meat warehousing program if he:

- (a) Has buying loyalty of at least 90 percent from each account;
- (b) Delivers a minimum meat volume of 200,000 pounds a week to customers;
- (c) Ships composite loads of groceries, meats, frozen foods, and produce;
- (d) Is close to meat packers able to supply beef, veal, lamb, and pork from one plant.

Personnel interviewed in two firms thought that the packer-shipment program was strong and effective, and that it could be operated effectively by an affiliated wholesaler, for the benefit of affiliated retailers, if the wholesaler was assured of retailer loyalty. Many small-volume wholesalers rely on this program for their meat supply. With both the packer-shipment and meat warehouse programs, it is essential that the wholesaler supervise the retail meat operation to assure proper handling.

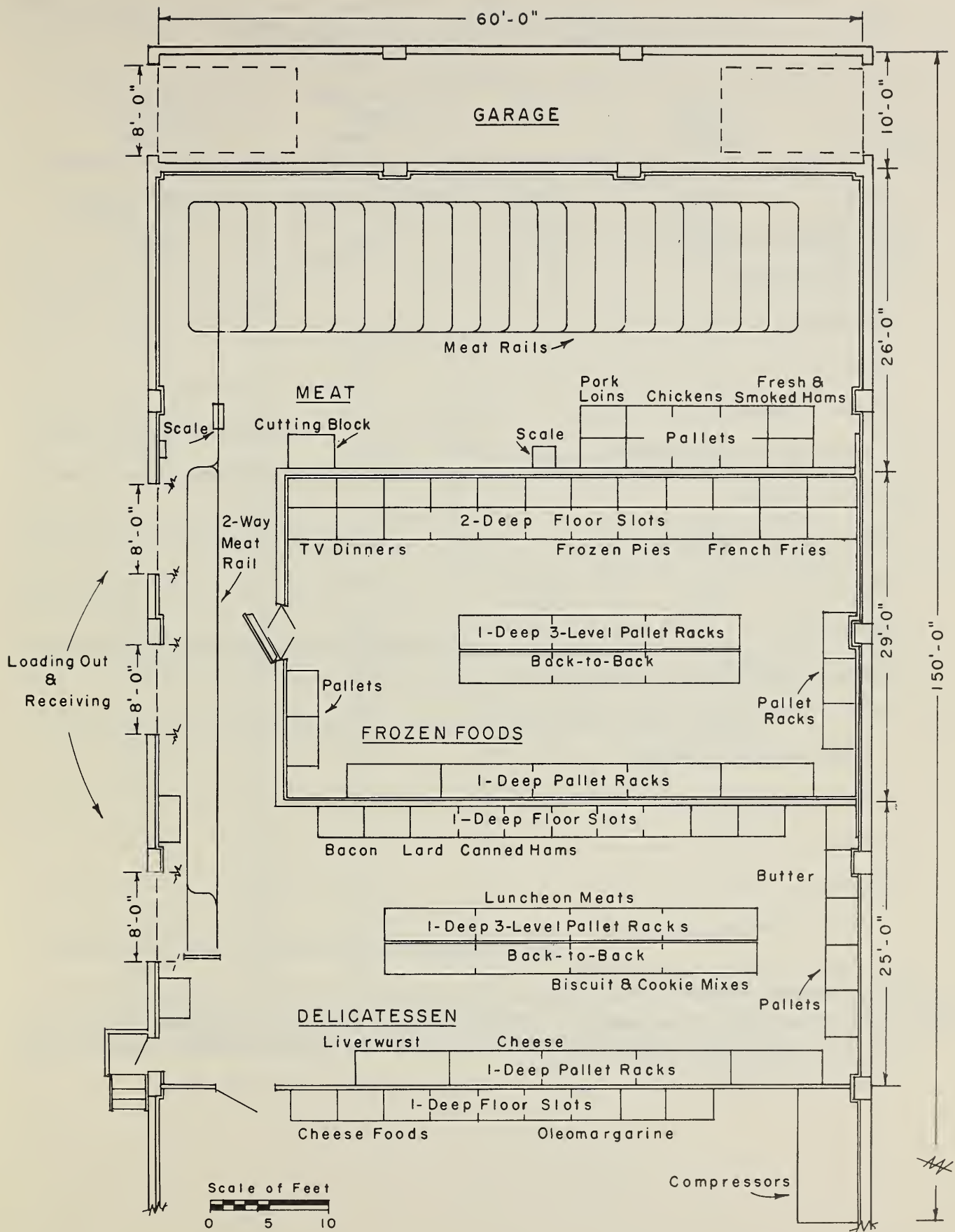


Figure 7.--A warehouse layout for handling meat, frozen foods, and delicatessen items.

TABLE 5.--Comparative statements of income of affiliated wholesalers using the packer-shipment and meat warehouse programs

Item ¹	Packer-shipment program (11 firms)	Warehouse meat program (4 firms)
	<u>Percent of sales</u>	<u>Percent of sales</u>
Gross margin on sales.....	2.43	3.20
Operating revenue:		
Advertising.....	.11	.13
Other.....	.08	--
Purchase discounts.....	.05	.07
Total margin and revenue.....	2.67	3.40
Operating expense:		
Merchandising (buying).....	.21	.20
Selling.....	.73	.54
Warehouse.....	.25	.80
Delivery income ²	(.13)	(.27)
Delivery expenses.....	.18	.23
Total delivery expense.....	.05	(.04)
Administrative.....	.52	.75
Turnover.....	.01	.10
Building.....	.12	.10
Total operating expenses.....	1.89	2.45
Net operating income before taxes.....	.78	.95

¹ For description of accounts, see Bartz, D.J., and Bouma, J.C., "Improved Accounting Methods for Wholesale Food Distributors," U.S. Dept. Agr. Mktg. Res. Report 454, March 1961, 142 pp., illus.

² Delivery income from fees charged retailers is shown in parentheses.

TABLE 6.--Estimated costs for retailers to obtain fresh meat, by three methods of purchase¹

Item	Direct from packer	From affiliated wholesaler by--	
		Packer shipment program	Meat warehouse program
	<u>Cents per lb.</u>	<u>Cents per lb.</u>	<u>Cents per lb.</u>
Basic cost (beef used for example).....	54.00	52.00	46.00
Freight cost to warehouse.....	--	--	1.25
Handling cost into and out of warehouse.	--	--	1.00
Delivery cost (combination loads).....	--	--	.50
2-percent markup at warehouse.....	--	--	1.00
Theoretical cost of product to merchant.	54.00	52.00	49.75
Charge for billing, handling, and other services with warehouse programs.....	--	1.00	1.00
Actual cost of product delivered to re- tail store.....	54.00	53.00	50.75
Direct savings to retailer.....	--	1.00	3.25

¹ Costs will vary with wholesaler locations within the United States.

APPENDIX

The following pages show (1) a typical participation agreement used by affiliated wholesalers for the packer-shipment meat program; (2) a retail meat department checklist used by one wholesaler; and (3) a typical store contact report form used by affiliated wholesalers.

MEAT PROGRAM PARTICIPATION AGREEMENT

Please enroll me as participating member of _____ meat buying and merchandising program, effective _____ .

As a member I will be entitled to the following benefits:

- #1 Centralized buying service on fresh - frozen - smoked and cooked meats - poultry - and all other products distributed via a meat packing house. All carcass meats to be personally selected whenever possible.
- #2 Competent supervision of my market. This supervision to include cutting tests, display and merchandising ideas, assistance in retail pricing, assistance with inventory and gross profit control.
- #3 Packers invoices to be extended by the meat merchandising department and corrected for errors.
- #4 All meat products are to be billed at (Supply House) invoice costs, plus service charge. Product will be delivered direct to store door by the meat packers.
- #5 Competitive price checks periodically.
- #6 A planned and effective meat advertising schedule each week.
- #7 Assistance on special promotions.
- #8 A training program for the meat department.

As a member of the (Supply House) meat program, I agree to the following policies covering the meat program:

- #1 To pay an initial fee of \$50 to the supply house.
- #2 To confine my purchases to and cooperate 100% with the supply house meat merchandiser.
- #3 To direct all meat salesmen to the central buying office.
- #4 To cooperate with the advertising program by having product on display at sales prices.
- #5 To follow the ordering procedures as outlined by the meat department.
- #6 To pay for purchases received as per policy outlined in the meat program which has been explained to me.
- #7 To take periodic inventories as outlined to me by meat department and report meat department sales with each inventory.
- #8 Realizing that a trial period of less than 90 days would be an unfair test, I agree to the terms of this contract for at least 90 days.
- #9 This contract shall continue in full force and effect unless cancelled by either party upon thirty (30) days written notice (after the 90-day trial period) without further liability to either party.

_____ RETAILER'S SIGNATURE	_____ SUPPLY HOUSE
_____ ADDRESS	_____ BY
_____ DATE	_____ DATE

Figure 8.

MEAT DEPARTMENT CHECK LIST

STORE _____ DATE _____ TIME _____

STORE TEMP. _____ COOLER TEMP. _____ COUNTER TEMP. _____

	GOOD	FAIR	POOR	COMMENTS	CORRECTIONS	DATE
GENERAL APPEARANCE						
BACK OF COUNTER FLOOR AREA						
CONDITION OF COOLER						
FRESH MEAT DISPLAY						
SMOKED MEAT DISPLAY						
FROZEN DISPLAY						
POULTRY DISPLAY						
MASS DISPLAYS						
SPECIAL SIGNS						
CODE DATES						
PERSONAL APPEARANCE						
ADEQUATE SUPPLIES						
OLD MERCHANDISE						
UNSALABLE MERCHANDISE						
PREPARATION AHEAD						
ADEQUATE VARIETY						
PRICING OF PRODUCT						
SPECIAL PROMOTIONS						
BACK ROOM						

SUPERVISOR _____ MEAT MANAGER _____

Figure 9.

MEAT MERCHANDISING DEPT.

STORE CONTACT REPORT

DATE _____

IBM _____

STORE NAME _____

CITY _____

CONTACT MADE BY _____

1. MEAT CASE DISPLAY. GOOD _____ FAIR _____ POOR _____

What steps taken to correct poor display or improve case merchandising layout?

Comment _____

2. CONDITION OF COOLER INVENTORY. GOOD _____ FAIR _____ POOR _____

Comment _____

3. CONDITION OF COOLER. GOOD _____ FAIR _____ POOR _____

4. WAS MEAT CUT, DISPLAYED AND TRIMMED PROPERLY IN THIS MARKET? YES _____ NO _____

Comment _____

5. WAS THIS MARKET AND ITS PERSONNEL NEAT, CLEAN AND APPEALING TO THE CONSUMER?
YES _____ NO _____ IF not - what corrective measures

Comment _____

6. WHAT OUTSIDE BUYING IS DONE IN THIS MARKET? Comment _____

7. IS OUTSIDE BUYING NECESSARY TO MAINTAIN PRESENT VOLUME AND PROFIT?

YES _____ NO _____ Comment _____

8. HOW OFTEN IS INVENTORY TAKEN? WEEKLY _____ BI-WEEKLY _____ MONTHLY _____ YEARLY _____

Figure 10.

9. ARE ALL INCOMING MEATS WEIGHED AND CHECKED IN PROPERLY? YES _____ NO _____

10. IS WORK SCHEDULE PROPERLY ARRANGED FOR EFFICIENT OPERATION? YES _____ NO _____

Comment _____

11. IS ANY EQUIPMENT OR RE-LAYING OF THIS MARKET NEEDED TO INCREASE VOLUME AND PROFIT?

YES _____ NO _____ Comment _____

12. ARE WEEKLY ADS OR ANY TYPE PROMOTION BEING PROPERLY SUPPORTED WITH MERCHANDISE?

YES _____ NO _____ Comment _____

13. HAVE YOU RECEIVED FULL COOPERATION FROM STORE OWNER AND MEAT MARKET PERSONNEL?

YES _____ NO _____ Comment _____

GENERAL COMMENTS _____

TIME SPENT IN STORE: _____ SIGNATURE _____

Figure 10--Continued.

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